REMARKS/ARGUMENTS

Claim Rejection – 35 USC 102

ITEM 6

Claims 1-10 stand rejected under 35 U.S.C. 102(b) as being anticipated by Allen et al. (US 2003/0227577).

Applicants amend the claims and assert the amended claims are not anticipated by Allen et al.

Claims 1-5

Applicants' amended claims 1-5 comprise, inter alia, "a source emitting towards the imager a polychromatic light beam in a fixed wavelength"; "a color wheel for scrolling colored segments comprising at least three transmissive or reflective fixed segments"; and the color segments being in "an order" such that "differences of energies between any two successive colored beams" are "the least variable possible."

To understand the intent and meaning of the combination of features in claims 1-5, Applicants direct attention to the table that follows Applicants' paragraph [0078] (in U.S. Publication No. 2007/0165317 for this application).

RGBCMY Colour wheel			Optimized RBMYCG colour wheel		
Colours	NRJ perceived	Transi-tions	Colours	NRJ perceived	Transi-tions
Red	0.347	1.1327	Red	0.347	0.2068
Green	1.48	1.3395	Blue	0.1405	0.4597
Blue	0.1405	2.0849	Magenta	0.6002	1.00771
Cyan	2.2254	1.6252	Yellow	1.6772	0.5482
Magenta	0.6002	1.0771	Cyan	2.2254	0.7454
Yellow	1.6772	1.3299	Green	1.48	1.1327
	Total	8.5892		Total	4.1699
	Mean	1.43154		Mean	0.69498

Observation of the color wheel arrangement which is arbitrarily selected to be Red-Green-Blue-Cyan-Magenta-Yellow in the table has a mean energy transition of 1.43154. However, the color wheel arrangement according to Applicants' invention is an arrangement that yields a mean energy transition of 0.69498 which is shown on the right hand side of the table and is a value that is lower than that for other orders and, consequently, "reduces color break up."

Allen et al. does not disclose in any of its embodiment an imager sequential illumination system comprising the combination of features of the claimed invention in amended claims 1-5.

The systems in Figs. 4, 10, 17, and 23 of Allen et al. each fail to disclose the combination of "a source emitting towards the imager a polychromatic light beam in a fixed wavelength"; "a color wheel for scrolling colored segments comprising at least three transmissive or reflective fixed segments"; and the color segments being in "an order" such that "differences of energies between any two successive colored beams" are "the least variable possible."

Rather, the system of Fig. 4 in Allen et al. uses a plurality of color beams each of which is spacially modulated by spacial light modulator 148; consequently, this system fails to provide a color wheel that filters a polychromatic light beam.

The system of Fig. 10 in Allen et al. uses a color wheel with the order Red-Green-Blue-White and provides a format for operating the system in such an order. This arrangement of the colored segments is not made in manner that considers the "differences of energies between any two successive colored beams."

The systems in Figs. 17 and 23 in Allen et al. use two color wheels in which a first color wheel filters light into primary colors and then permits the primary colored light to be incident on a second color wheel. In these examples, there is no indication that the resultant ordering or the colors are done is a manner that captures "differences of energies between any two successive colored beams" that are "the least variable possible."

In light of Applicants' assertions which point out that each of the examples in Allen et al. fail to disclose the combination of features in Applicants' claimed invention in amended claims 1-5, Applicants respectfully ask for reconsideration of the rejections.

Claims 6-7

Applicants' amended claims 6-7 comprise, inter alia, providing a "color wheel having at least three transmissive and/or reflective fixed segments that are suitable for obtaining successive beams of different colors when the fixed segments scroll sequentially through a zone of transmission of an illumintation beam"; "measuring the excitation energies of each colored beam induced by the various segments"; and "distributing the fixed colored segments ... in an order such that the differences of measured excitation energies ... are the least variable possible."

To understand the intent and meaning of the combination of features in claims 6-7, Applicants direct attention to the table that follows Applicants' paragraph [0078] (in U.S. Publication No. 2007/0165317 for this application).

RGBCMY Colour wheel			Optimized RBMYCG colour wheel		
Colours	NRJ perceived	Transi-tions	Colours	NRJ perceived	Transi-tions
Red	0.347	1.1327	Red	0.347	0.2068
Green	1.48	1.3395	Blue	0.1405	0.4597
Blue	0.1405	2.0849	Magenta	0.6002	1.00771
Cyan	2.2254	1.6252	Yellow	1.6772	0.5482
Magenta	0.6002	1.0771	Cyan	2.2254	0.7454
Yellow	1.6772	1.3299	Green	1.48	1.1327
	Total	8.5892		Total	4.1699
	Mean	1.43154		Mean	0.69498

Observation of the color wheel arrangement which is arbitrarily selected to be Red-Green-Blue-Cyan-Magenta-Yellow in the table has a mean energy transition of 1.43154. However, the color wheel arrangement according to Applicants' invention is an arrangement that yields a mean energy transition of 0.69498 which is shown on the right hand side of the table and is a value that is lower than that for other orders and, consequently, "reduces color break up."

Allen et al. does not disclose in any of its embodiments a method that comprises the combination of features of the claimed invention in amended claims 6-7.

The systems in Figs. 4, 10, 17, and 23 of Allen et al. each fail to disclose the combination of providing a "color wheel having at least three transmissive and/or reflective fixed segments

that are suitable for obtaining successive beams of different colors when the fixed segments scroll sequentially through a zone of transmission of an illumintation beam"; "measuring the excitation energies of each colored beam induced by the various segments"; and "distributing the fixed colored segments ... in an order such that the differences of measured excitation energies ... are the least variable possible."

Rather, the system of Fig. 4 in Allen et al. uses a plurality of color beams each of which is spacially modulated by spacial light modulator 148; consequently, this system fails to provide a color wheel that filters an illumination beam.

The system of Fig. 10 in Allen et al. uses a color wheel with the order Red-Green-Blue-White and provides a format for operating the system in such an order. This arrangement of the colored segments is not made in manner that considers the "differences of measured excitation energies ... are the least variable possible."

The systems in Figs. 17 and 23 in Allen et al. use two color wheels in which a first color wheel filters light into primary colors and then permits the primary colored light to be incident on a second color wheel. In these examples, there is no indication that the resultant ordering or the colors are done is a manner that captures the "differences of measured excitation energies ... are the least variable possible."

In light of Applicants' assertion which point out that each of the examples in Allen et al. fail to disclose the combination of features in Applicants' claimed invention in amended claims 8-10, Applicants respectfully ask for reconsideration of the rejections.

Claims 8-10

Applicants' amended claims 8-10 provides a "[d]evice of fixed colored segments" comprising, inter alia, "juxtaposed zones of different colors making it possible to provide beams of different colors, by an illumination beam" and the zones being ordered such that when the zones "are successively illuminated according to the order, the differences of energies between any two successive colored beams that follow one another ... are the least variable possible."

To understand the intent and meaning of the combination of features in claims 8-10, Applicants direct attention to the table that follows Applicants' paragraph [0078] (in U.S. Publication No. 2007/0165317 for this application).

RGBCMY Colour wheel			Optimized RBMYCG colour wheel		
Colours	NRJ perceived	Transi-tions	Colours	NRJ perceived	Transi-tions
Red	0.347	1.1327	Red	0.347	0.2068
Green	1.48	1.3395	Blue	0.1405	0.4597
Blue	0.1405	2.0849	Magenta	0.6002	1.00771
Cyan	2.2254	1.6252	Yellow	1.6772	0.5482
Magenta	0.6002	1.0771	Cyan	2.2254	0.7454
Yellow	1.6772	1.3299	Green	1.48	1.1327
	Total	8.5892		Total	4.1699
	Mean	1.43154		Mean	0.69498

Observation of the successive color illumination which is arbitrarily selected to be Red-Green-Blue-Cyan-Magenta-Yellow in the table has a mean energy transition of 1.43154. However, the successive color illumination according to Applicants' invention is an arrangement that yields a mean energy transition of 0.69498 which is shown on the right hand side of the table and is a value that is lower than that for other orders and, consequently, "reduces color break up."

Allen et al. does not disclose in any of its embodiment a device of fixed colored segments comprising the combination of features of the claimed invention in amended claims 8-10.

The systems in Figs. 4, 10, 17, and 23 of Allen et al. each fail to disclose the combination of a device having "juxtaposed zones of different colors making it possible to provide beams of different colors, by an illumination beam" and the zones being ordered such that when the zones "are successively illuminated according to the order, the differences of energies between any two successive colored beams that follow one another ... are the least variable possible."

Rather, the system of Fig. 4 in Allen et al. uses a plurality of color beams each of which is spacially modulated by spacial light modulator 148; consequently, this system fails to provide

a single illumination beam that is successively incident on "juxtaposed zones on different colors."

The system of Fig. 10 in Allen et al. uses a color wheel with the order Red-Green-Blue-White and provides a format for operating the system in such an order. This arrangement of the colored segments is not made in manner that considers the "differences of energies between any two successive colored beams."

The systems in Figs. 17 and 23 in Allen et al. use two color wheels in which a first color wheel filters light into primary colors and then permits the primary colored light to be incident on a second color wheel. In these examples, there is no indication that the resultant ordering or the colors are done is a manner that captures "differences of energies between any two successive colored beams" that are "the least variable possible."

In light of Applicants' assertion which point out that each of the examples in Allen et al. fail to disclose the combination of features in Applicants' claimed invention in amended claims 8-10, Applicants respectfully ask for reconsideration of the rejections.

Conclusion

In light of the above assertions, Applicants request reconsideration of the rejections and entry of the amendments to the claims.

If the Examiner has any questions or comments that would facilitate the disposition or resolution of the issues, the Examiner is respectfully requested to contact the undersigned at 609-734-6816.

Please charge a one-month extension fee and any other fees associated with the application to Deposit Order Account No. 07-0832.

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